



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D212-664-101
Job Sheet 199239



Part No: D212-664-101

Job Qty: 1 pcs

Part Name: Fwd Crosstube - High



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 8/15/19

Job Tracking No:

Due Date: 9/17/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: D212-664-141 REV E/ IIN-D212-664 REV.J IPP Rev:E 04.02.16 Reformat KJ/DS IPP Rev:F 06-03-29 Remove
Comments on Pick List JLM IPP Rev:G 07-04-30 As per Rev C JLM IPP Rev:H 11.04.26 inspection strip ecn 11-
549 EC verf by:DD IPP REV:I 14.05.27 AS PER ECN 14-570 DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	Sign-off
					Setup Hrs	Run Hrs		
120	Crosstubes - Bend - 1	1 pcs	9/17/19	9/17/19	0.50	1.00	Crosstubes - Bend	BS 8/26/2019
130	QC 15	1 pcs	9/17/19	9/17/19	0.00	0.00	QC 15 - 12	
							QC 15 - 3	
							QC 15 - 47	
							QC 15 - 49	
							QC 15 - 58	
							QC 15 - 9	
							QC 15 - 68	DAS AUG 26 2019 68
140	Crosstubes - 2 - B4B	1 pcs	9/17/19	9/17/19	0.00	1.00	Crosstubes - 1 - B4B	9-89
							Crosstubes - 2 - B4B	BS 8/27/2019
							Crosstubes - 3 - B4B	
							Crosstubes - 4 - B4B	
150	Crosstubes - 3 - B4B	1 pcs	9/17/19	9/17/19	0.00	0.50	Crosstubes - 1 - B4B	
							Crosstubes - 2 - B4B	
							Crosstubes - 3 - B4B	BD 9/19/19
							Crosstubes - 4 - B4B	
160	QC 7	1 pcs	9/17/19	9/17/19	0.00	0.00	QC 7 - 10	
							QC 7 - 13	
							QC 7 - 14	
							QC 7 - 15	
							QC 7 - 17	
							QC 7 - 18	
							QC 7 - 19	
							QC 7 - 2	
							QC 7 - 28	
							QC 7 - 3	
							QC 7 - 30	
							QC 7 - 34	
							QC 7 - 36	
							QC 7 - 37	

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					QC 7 - 41	
					QC 7 - 47	
					QC 7 - 48	
					QC 7 - 51	
					QC 7 - 58	
					QC 7 - 59	
					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	
					QC 7 - 50	
					QC 7 - 67	GP 19-09-19
					QC 7 - 40	
					QC 7 - 24	
					QC 7 - 43	
					QC 7 - 61	
					QC 7 - 81	
165 QC 5	1 pcs	9/17/19	0.00 0.00		QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	SEP 19 2019 DAS 68
					QC 5 - 9	9-89
					QC 5 - 50	
					QC 5 - 30	
					QC 5 - 40	
					QC 5 - 61	
170 Outsource - 2 - NDT per QSI038	1 pcs	9/17/19			SKY002-VC	PL 09/20/2019
180 Packaging 2-1 - Receive - B4B	1 pcs	9/17/19	0.00 0.00		Packaging 2 - 1 - B4B	
					Packaging 2 - 2 - B4B	
					Packaging 2 - 3 - B4B	
					Packaging 2 - 5 - B4B	
					Packaging 2 - 4 - B4B	
					Packaging 2 - 6 - B4B	
					Packaging 2 - 7 - B4B	
					Packaging 2 - 8 - B4B	
					Packaging 2 - 9 - B4B	
					Packaging 2 - 10 - B4B	
					Packaging 2 - 11 - B4B	
					Packaging 2 - 12 - B4B	
					Packaging 2 - 13 - B4B	
					Packaging 2 - 14 - B4B	
					Packaging 2 - 15 - B4B	
					Packaging 2 - 16 - B4B	
					Packaging 2 - 17 - B4B	
					Packaging 2 - 18 - B4B	
					Packaging 2 - 19 - B4B	
					Packaging 2 - 20 - B4B	
					Packaging 2 - 21 - B4B	
					Packaging 2 - 22 - B4B	

8/15/2019

[Dart Hawkesbury] Job Sheet - Lajeunesse, Marie

				Packaging 2 - 23 - B4B	
				Packaging 2 - 24 - B4B	
				Packaging 2 - 25 - B4B	
				Packaging 2 - 26 - B4B	
				Packaging 2 - 27 - B4B	
				Packaging 2 - 28 - B4B	
				Packaging 2 - 29 - B4B	
				Packaging 2 - 30 - B4B	
				Packaging 2 - 31 - B4B	
				Packaging 2 - 32 - B4B	
				Packaging 2 - 33 - B4B	
				Packaging 2 - 34 - B4B	
				Packaging 2 - 35 - B4B	
				Packaging 2 - 36 - B4B	
190 QC 5	1 pcs	9/17/19	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	SEP 23 2019
				QC 5 - 61	DAG 40 9-89
				QC 5 - 81	
200 Spray Paint - 2 - B4B	1 pcs	9/17/19	0.00 0.25	Spray Paint - 1 - B4B	AB 19-9-23
				Spray Paint - 2 - B4B	
				Spray Paint - 3 - B4B	
				Spray Paint - 4 - B4B	
210 QC 14	1 pcs	9/17/19	0.00 0.00	QC 14 - 15	
				QC 14 - 2	
				QC 14 - 34	
				QC 14 - 41	
				QC 14 - 51	
				QC 14 - 58	
				QC 14 - 59	
				QC 14 - 9	
				QC 14 - 68	SEP 24 2019
				QC 14 - 40	DAG 68 9-89
				QC 14 - 19	
				QC 14 - 43	
				QC 14 - 24	
				QC 14 - 61	
				QC 14 - 81	
220 Crosstubes - 4 - B4B	1 pcs	9/17/19	0.00 1.69	Crosstubes - 1 - B4B	
				Crosstubes - 2 - B4B	RD 19-9-24
				Crosstubes - 3 - B4B	
				Crosstubes - 4 - B4B	
230 QC 5	1 pcs	9/17/19	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	

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				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	
				QC 5 - 61	
				QC 5 - 81	
240	Packaging 1-1 - Pick Kit - B4B	1 pcs	9/17/19	0.00 0.00	
				Packaging 1 - 1 - B4B	
				Packaging 1 - 2 - B4B	
				Packaging 1 - 3 - B4B	
				Packaging 1 - 4 - B4B	
				Packaging 1 - 5 - B4B	
				Packaging 1 - 6 - B4B	
				Packaging 1 - 7 - B4B	
				Packaging 1 - 8 - B4B	
				Packaging 1 - 9 - B4B	
				Packaging 1 - 10 - B4B	
				Packaging 1 - 11 - B4B	
				Packaging 1 - 12 - B4B	
				Packaging 1 - 13 - B4B	
				Packaging 1 - 14 - B4B	
				Packaging 1 - 15 - B4B	
				Packaging 1 - 16 - B4B	
				Packaging 1 - 17 - B4B	
				Packaging 1 - 18 - B4B	
				Packaging 1 - 19 - B4B	
				Packaging 1 - 20 - B4B	
				Packaging 1 - 21 - B4B	
				Packaging 1 - 22 - B4B	
				Packaging 1 - 23 - B4B	
				Packaging 1 - 24 - B4B	
				Packaging 1 - 25 - B4B	
				Packaging 1 - 26 - B4B	
				Packaging 1 - 27 - B4B	
				Packaging 1 - 28 - B4B	
				Packaging 1 - 29 - B4B	
				Packaging 1 - 30 - B4B	
				Packaging 1 - 31 - B4B	
				Packaging 1 - 32 - B4B	
				Packaging 1 - 33 - B4B	
				Packaging 1 - 34 - B4B	
				Packaging 1 - 35 - B4B	
				Packaging 1 - 36 - B4B	
250	QC 4	1 pcs	9/17/19	0.00 0.00	
				QC 4 - 28	
				QC 4 - 58	
				QC 4 - 69	
				QC 4 - 9	
				QC 4 - 46	
				QC 4 - 68	
				QC 4 - 72	

DAS
SEP 26 2019 68
9-89

DAS
74
9-89
SEP 27 2019

				QC 4 - 74	DAS	10/31/2019
				QC 4 - 75	78	
260 Packaging 3-1 - Stock - B4B	1 pcs	9/17/19	0.00 0.00	Packaging 3 - 1 - B4B	9-89	
				Packaging 3 - 2 - B4B		
				Packaging 3 - 3 - B4B		
				Packaging 3 - 4 - B4B		
				Packaging 3 - 5 - B4B		
				Packaging 3 - 6 - B4B		
				Packaging 3 - 7 - B4B		
				Packaging 3 - 8 - B4B		
				Packaging 3 - 9 - B4B		
				Packaging 3 - 10 - B4B		
				Packaging 3 - 11 - B4B		
				Packaging 3 - 12 - B4B		
				Packaging 3 - 13 - B4B		
				Packaging 3 - 14 - B4B		
				Packaging 3 - 15 - B4B		
				Packaging 3 - 16 - B4B		
				Packaging 3 - 17 - B4B		
				Packaging 3 - 18 - B4B		
				Packaging 3 - 19 - B4B		
				Packaging 3 - 20 - B4B		
				Packaging 3 - 21 - B4B		
				Packaging 3 - 22 - B4B		
				Packaging 3 - 23 - B4B		
				Packaging 3 - 24 - B4B		
				Packaging 3 - 25 - B4B	DAS	
				Packaging 3 - 26 - B4B	78	
				Packaging 3 - 27 - B4B	9-89	
				Packaging 3 - 28 - B4B		
				Packaging 3 - 29 - B4B		
				Packaging 3 - 30 - B4B		
				Packaging 3 - 31 - B4B		
				Packaging 3 - 32 - B4B		
				Packaging 3 - 33 - B4B		
				Packaging 3 - 34 - B4B		
				Packaging 3 - 35 - B4B		
				Packaging 3 - 36 - B4B	DAS	
265 DC - 1 - B4B	1 pcs	9/17/19	0.00 0.00	DC - 1 - B4B	21	OCT 03 2019
				DC - 2 - B4B	9-89	
270 QC 21 - FG	1 pcs	9/17/19	0.00 0.00	QC 21 - FG - 21		OCT 03 2019
				QC 21 - FG - 70	DAS	
				QC 21 - FG - 53	21	

Part Op 120 - Bend tube as per Dwg D212-664-141 using CNC bender program 212-fw and Folio D212-664-101

Descriptions: 130 - (QC15- Crosstube Dimensional Check)

140 - "1-Drill pilot holes in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549, using drill table DT8577, set-up towers in hole #7 as per QSI 10 2-Ream hole to finish size in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes. 3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-141 4-*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-141"

150 - HandFinish5 (Crosstubes Chemical Conversion) ***IMMEDIATELY AFTER GRINDING***

160 - (QC7-Inspect Chemical Conversion Coat)

165 - QC5- Inspect part completeness to step on W/O

170 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order

180 - (Receive & Inspect for Damage & Mat'l Certs) Ensure copy of NDT results attached to work order.

190 - (QC5- Inspect part completeness to step on W/O) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for damage & ensure results are as per Dwg D212-664-141

200 - (Spray Paint / NDT Room) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1-Prime inside & outside crosstube as per QSI 005 4.2 BATCH: 5189223 2- After painting remove masking and apply matte clear coat per QSI005 4.2 3- MASK UNDERSIDE OF CROSSTUBE AS SHOWN ON DWG BEFORE PAINTING 4 -Paint Outside of Tube as per Dart QSI 005 4.2 clear 5189223 Paint 5204723

- 210 - (QC14- Inspect Spray Paint) Then, Wrap in plastic bag to protect from scratches
- 220 - *****LAY DOWN CROSSTUBE ON TABLE AND PUT DT10302 PINS IN SADDLE HOLE FACING UP, USE HOLE IN TAPE MEASURE TO PUT IN PINS FOR LOCATING CENTER OF CROSSTUBE. ***** 1- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg 2- Install supports with Proseal 890 per D212-664-141 and QSI 015 A/R Proseal 890 Batch: 5176610 EXP: 19/10
- PROSEAL CURE TIME 72 HOURS: Start: 19-9-24 Finish: 19-9-27 3- Install clamps with rubber cushion (ENSURE CLAMPS ARE INSTALL ON TOP SIDE OF CROSSTUBE) using DT9565 as per Dwg D212-664-141. ***Torque all clamps to 80-100 IN-LBS.***
- 230 - (QC5- Inspect part completeness to step on W/O) ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***
- 240 - (Pick Kit)
- 250 - QC4- 100% Inspect kits for completeness) ***VERIFY BY _____ BATCH # TO MATCH W/O
- 260 - (Identify as per dwg & Stock Location: _____) Identify and pack for shipping as per PPP D212-664-101 Location : FG094
- 265 - Photocopy bluefile and create labels as per PPP D212-664-101 CHG006
- 270 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D212-664-101TRN	Crosstube Turning Detail	1 pcs (1 ea)	120-Crosstubes - Bend - 1	5184854
D2893-1	Support	2 pcs (2 ea)	220-Crosstubes - 4 - B4B	
D3595-063-450	Rubber Cushion 0.63" Wide X 4.50" Long	4 pcs (4 ea)	220-Crosstubes - 4 - B4B	
MS21920-25	Clamp	4 Ea (4 ea)	220-Crosstubes - 4 - B4B	
AN6-35A	Bolt	4 Ea (4 ea)	240-Packaging 1-1 - Pick Kit - B4B	5184436
AN6-36A	Bolt	4 Ea (4 ea)	240-Packaging 1-1 - Pick Kit - B4B	5140409
D3428-1	Placard	1 pcs (1 ea)	240-Packaging 1-1 - Pick Kit - B4B	5140317
MS21042L6	Nut	6 Ea (6 ea)	240-Packaging 1-1 - Pick Kit - B4B	5142495
NAS1149D0663J	Washer	18 Ea (18 ea)	240-Packaging 1-1 - Pick Kit - B4B	5107525

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
120-Crosstubes - Bend - 1	D212-664-101TRN	1	4	0
220-Crosstubes - 4 - B4B	D2893-1	2	24	0
	D3595-063-450	4	37	0
	MS21920-25	4	103	0
	AN6-35A	4	31	0
	AN6-36A	4	25	0
	D3428-1	1	15	0
	MS21042L6	6	244	0
	NAS1149D0663J	18	588	0

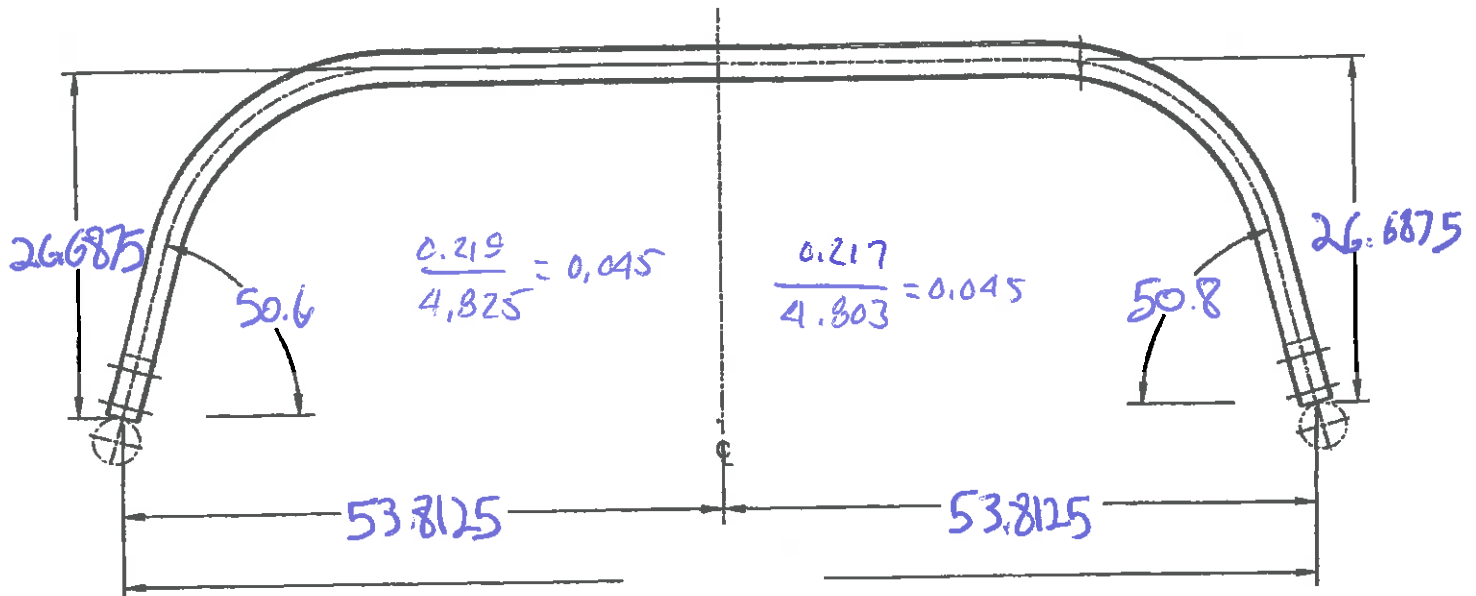
Part Specifications

Specifications could not be found.

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DART AEROSPACE LTD		Work Order: 199239
Description: Crosstube High Fwd (205/212/412)		Part Number: D212-664-101
Inspection Dwg: D212-664-141	Rev: E	Page 1 of 1

Required Dimension	Min	Max
Height	26.67	27.17
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.7
Bending Passes	3	--
Crushing	--	7.2%



2.303
2.522

	Side A	Side B
Bending Passes		
Crushing	4.5%	4.5%
Comments		

2.293
2.510

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	08.04.21	Dwg Rev updated	KJ/JM	
C	10.04.01	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	
E	14.07.28	Revised max crushing %	KJ	
F	16.01.15	Revised Height min/max dimensions	KJ	

Item	Qty -141	Qty -141B	Qty -141F	Part Number	Description
1	X			D212-864-141	CROSSTUBE ASSEMBLY (205212/412 HIGH FWD)
2		X		D212-864-141B	CROSSTUBE ASSEMBLY (214 HIGH FWD)
3			X	D212-864-141F	CROSSTUBE ASSEMBLY (205212/412 HIGH FWD) (ANODIZED)
4	1	1	1	D6105-128	CROSSTUBE
5	2		2	D2883-1	SUPPORT
6	4	4	4	D3695-063-450	RUBBER CUSHION
7		2		D6017-1	SUPPORT
8	4	4	4	MS21820-25	CLAMP (OR MS21820-26)
9	AR	AR	AR	PROSEAL 860 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6005-128
- 2) FINISH: FINISHED LENGTH = 126.514+0.020
- 3) FINISH -141 & -141B:
 - a) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - b) PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 - c) MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C8-2 / C8-3, HATCHED AREA)
 - d) PAINT OUTSIDE PER DART QSI 005 4.2
 - e) REMOVE MASKING AND APPLY MATTE CLEAR COAT
- 4) FINISH -141F:
 - a) ANODIZE PER MIL-A-8825, TYPE II, CLASS 1.
 - b) ALCOHOL (DO NOT ETCH) PER QSI 005 4.1, 2
 - c) PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 - d) MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C8-2 / C8-3, HATCHED AREA)
 - e) PAINT OUTSIDE PER DART QSI 005 4.2
 - f) REMOVE MASKING AND APPLY MATTE CLEAR COAT
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 6) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 7) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-864-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS
- 8) WEIGHT: D212-864-141/141B/141F = 33.8 lbs
- 9) PART IS SYMMETRIC ABOUT CENTERLINE.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- 10) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF R36.5 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- 12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 036.

ASSEMBLY

- 13) TO INSTALL, D2883-1 / D6017-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 860 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 14) INSTALL MS21820-25 CLAMPS (OR -26) WITH D3695-063-450 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.3 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 860 SEALANT HAS CURED FOR 72 HOURS.

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AIR FORCE NOTICE

199239 HUS
19-08-15

RELEASED
2014-05-26
IND

E	ADD -141F. D6017-1 WAS D2883-1 (-141B). PROSEAL WAS MAGNOBOND, NOTE 2: ADD INSPECTION WINDOW, NOTE 11: ALLOW 7.2% GRIND, NOTE 16: ADD 72HR CURE & RETORQUE FOR PROSEAL. ADD SHEET 3, CLAMPING REVERSED TO PREVENT CHIPPING (B-2, B-3) BEND HEIGHT TOL. NOW 0.25 WAS 0.19 (C1-3), INCORP. DED D-15-93	CP	14.04.01
D	REFORMAT/REVISE GENERAL NOTES/PART LIST: REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -141B (ZN C8-2 / C8-3) REMOVED REF & ADD TOLERANCES (ZN C8-2 / C8-3 & B-3); RELOCATED FLAG REF PER PART (B-3) (C-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	06.09.90
C	REMOVE -891 ABRASION STRIP; ADD MAGNOBOND 8989, CUSHION, REVERSE CLAMPS	PH	07.03.98
B	ADD HOLES FOR COMPATIBILITY WITH BHT1AA SKIDTUBES	PH	06.02.94
A	NEW ISSUE	CP	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DATE			

DART AEROSPACE LTD

HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D212-864-141

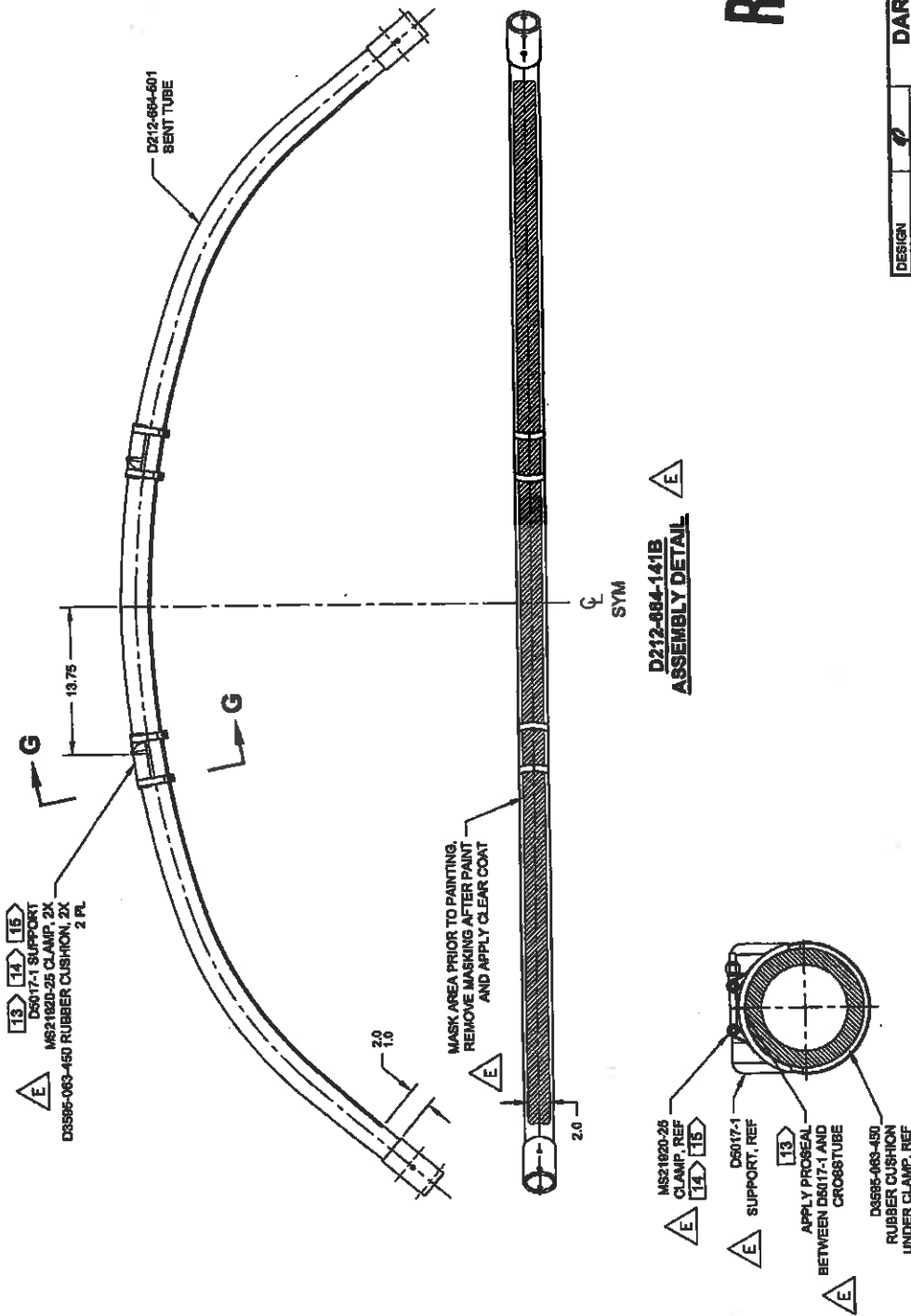
SHEET 1 OF 6

SCALE

NTS

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DESIGN		DART AEROSPACE LTD HAMMERSBURY, ONTARIO, CANADA		
DRAWN		DRAWING NO.	REV. E	
CHECKED		D212-664-141	SHEET 3 OF 5	
MFG. APPR.		TITLE	SCALE	
APPROVED		XTBUE ASSY (205/212/412 HI FWD)	NIS	
DE APPR.		COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN IS THE PROPERTY OF DART AEROSPACE LTD AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.		
DATE	14.04.01			



SECTION G-G
SCALE 4X



Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only

NCR No. _____

Job: _____

Part No. _____

DISPOSITION

Rework			
Scrap			
Use-as-is			

DEPARTMENT/PROCESS

Skid-tube		Cross tube		Eng. (Non-AW)	
Machining		Small Fab		Prod. Eng. Coord.	
Large Fab		Finishing		Rec/Store/Packaging	

Engineering	
Water Jet	
Supplier	
Quality	

Date: _____

Sequence #: _____

QTY Affected: _____

MRB (QS1042)

Description Work Order Deviation

Disposition

Completed By

Lead hand / Supervisor

QC / QA Coordinator

Root Cause

Operator	
Manufacturing Process	
Equip/Tooling	
Handling/Preservation	
Material	
Product Improvement	
Process Improvement	
Human Factors	

FAULT CATEGORY

Pressure/Forced		Contamination		Power Loss/Surge	
Bending		Misaligned/off center		Folio/Program	
Crushing		BOM/Route		Grain Direction	
Cracks		Broken/Damage/Defect		Weld	
Crimp/Kink/Ripple/Wave/Twist		Incomplete/Unclear Instructions		Wrong Stock Pulled	
Marks/Chatter		Drill Holes		Out of Sequence	
Mislabeled		Fit/Function		Off-set/Set-up	

Other/Details:

Positioned Wrong	
Outside Tolerance	
Drawing	
Finish	
Part Lost/Missing	
Misread	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **POHB044535**



Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

Attention: Jenne, Heather

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB044535
PO Date: 9/19/19
Due Date: 9/20/19
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Phone:

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	196105	D206-667-103	Fwd Crosstube - High 206L / L1 / L3 / L4 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
2	196106	D206-667-103	Fwd Crosstube - High 206L / L1 / L3 / L4 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50



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PURCHASE ORDER

POHB044535



Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	200061	D206-667-207BL	Aft Crosstube - Mid Height 206L / L1 / L3 / L4, Blue : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed XI	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
							SEP 20 2019				DP
4	200062	D206-667-207BL	Aft Crosstube - Mid Height 206L / L1 / L3 / L4, Blue : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed XI	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
							SEP 20 2019				DP
5	199238	D212-664-101	Fwd Crosstube - High : TC STC SH01-9 Issue 3, FAA STC SR01298NY 09/01/08, EASA STC EASA.IM.R.S.01304 07/03/06, DGAC MEXICO STC IA-316/2015 15/06/17 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed XI	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
							SEP 20 2019				DP



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Hawkesbury, ON
K6A 1K7
Canada

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PURCHASE ORDER

POHB044535



Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	99239	D212-664-101	Fwd Crosstube - High : TC STC SH01-9 Issue 3, FAA STC SR01298NY 09/01/08, EASA STC EASA.IM.R.S.01304 07/03/06, DGAC MEXICO STC IA- 316/2015 15/06/17 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
Grand Total:											\$915.00

Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 9/20/19 2:05 PM dart.lussier.patrick

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO41837	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: POHB044535
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT ON:

2 FWD CROSSTUBES , P/N: D212-664-101 , J/S: 199238 , 199239

2 AFT CROSSTUBES , P/N: D206-667-207BL , J/S: 200061 , 200062

2 FWD CROSSTUBES , P/N: D206-667-103 , J/S: 196105 , 196106

DAS
40
9-89

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-16						SEP 20 2019	m
NO CRACK FOUND							
PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , DEV. MPO11715 , UV LIGHT M-20142							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

RECEIVED
SEP 20 2019
DART AEROSPACE LTD.

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	Name: RAFIK MELIKIAN	ACA/SCA Stamp 	Date: SEP 20 2019

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	QTY -101	QTY -201	QTY -203	Part Number	Description
	X			D212-664-101	CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
		X		D212-664-201	CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
			X	D412-664-203	CROSSTUBE INSTALLATION, 412 HIGH AFT
1	1			D212-664-141	CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
2		1		D212-664-241	CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
3			1	D412-664-243	CROSSTUBE ASSEMBLY, 412 HIGH AFT
10	2			* D2893-1	SUPPORT
11	4			* D3595-063-450	RUBBER CUSHION
12	4			* MS21920-25	CLAMP (OR MS21920-26)
13	4			AN6-35A	BOLT
14	4			AN6-36A	BOLT
15	6			MS21042L6	NUT (OR MS21042-6)
16	18			AN960JD616	WASHER
20		2		* D2940-1	SUPPORT
21		4		* D3595-063-530	RUBBER CUSHION
22		4		* MS21920-28	CLAMP (OR MS21920-30)
23		4		AN6-40A	BOLT
24		2		AN6-41A	BOLT
25		6		MS21042L6	NUT (OR MS21042-6)
26		18		AN960JD616	WASHER
30			1	* D2896-1	SUPPORT
32			2	* D3595-063-570	RUBBER CUSHION
33			4	* MS21920-28	CLAMP
34			2	* MS21920-30	CLAMP (OR MS21920-32)
35			4	AN6-40A	BOLT
36			2	AN6-41A	BOLT
37			6	MS21042L6	NUT (OR MS21042-6)
38			18	AN960JD616	WASHER
39			2	* D3189-1	CHAFING SHIELD
50	1	1		D3428-1	PLACARD

* REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-141/-241 OR D412-664-243 ASSEMBLIES ABOVE.

NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AAI SKIDTUBES.